

**FAX TRANSMISSION****DATE:** January 8, 2010**PTO IDENTIFIER:** Application Number 10/727,118  
Patent Number**Inventor:** Jeffrey J. Fitzgerald**MESSAGE TO:** Examiner Nguyen**FAX NUMBER:** (571) 273-3148**FROM:** ROPES & GRAY LLP

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Claims for Examiner's Amendment

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The following listing of claims will replace all prior versions, and listings, of claims in the application. In this listing of claims, claims 2 and 18 have been canceled. The subject matter of claim 2 has been incorporated into claims 1 and 12. The subject matter of claim 18 has been incorporated into claim 17. No new matter has been added.

Listing of Claims:

1. (Currently Amended) A method of improving network availability in a segmented network, comprising the steps of:
  - selecting a source network segment including a source node;
  - selecting a destination network segment including a plurality of destination nodes;
  - periodically transmitting a test message over a plurality of communication links from the source node in communication with the source network segment to the plurality of destination nodes, each of the plurality of destination nodes being in communication with the destination network segment;
  - generating, for each of the plurality of destination nodes, a return message to be transmitted to the source node if the test message is received at the destination node;
  - determining, at the source node in the source network segment, the status of each of the plurality of communication links in response to the return messages generated by the plurality of destination nodes in the destination network segment, wherein determining the status comprises indicating a fault in one of said one or more paths if said source node does not receive at least a predetermined number of return messages from said destination nodes in response to a predetermined number of test messages transmitted to said destination nodes; and
  - transmitting the determined status of each of the plurality of communication links from the source node in the source network segment to each of the plurality of destination nodes in the destination network segment that generated the return message.
2. (Canceled).

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3. (Original) The method of claim 1, and further comprising the step of configuring one of said paths between said source node and said one or more destination nodes in response to the determined status.
4. (Previously Presented) The method of claim 1, wherein the test message is a Logical Link Control type 1 frame format.
5. (Original) The method of claim 1, wherein the return message is an echo message generated in response to the test message.
6. (Original) The method of claim 1, wherein the source and destination nodes are selected from the group consisting of a host, a router and a load balancer.
7. (Original) The method of claim 1, and further comprising the step of updating a routing table in response to the determined status.
8. (Original) The method of claim 1, wherein the step of configuring includes avoiding paths through dead links between nodes or paths connecting to unresponsive destination nodes.
9. (Original) The method of claim 1, wherein determining the status includes the steps of: waiting a pre-determined period of time for the return message from a destination node, and if the status of the destination node has changed, the source node updating a local adjacency status table, and propagating an updated routing table to other nodes on the segmented network.
10. (Original) The method of claim 1, wherein the test message is not sent within the source network segment.
11. (Original) The method of claim 1, wherein the test message is transmitted approximately once per second.
12. (Currently Amended) A system for improving availability comprising:  
a plurality of destination nodes in a destination network segment in communication with a respective one of a plurality of destination network segments, each of the destination nodes

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configured to receive a test message through one of a plurality of communication links and generate a return message;

a source node in a source network segment in communication with each of the plurality of destination nodes in the destination network segment, the source node configured to provide a test message to each of the plurality of destination nodes in the destination network segment, and for determining the status, at the source node in the source network segment, of each of the plurality of communications links in response to the return messages, wherein determining the status comprises indicating a fault in one of said one or more paths if the source node does not receive at least a predetermined number of return messages from each of the plurality of destination nodes in response to a predetermined number of test messages transmitted to each of the plurality of destination nodes; and

a configuration update module in communication with the source node in the source network segment and the plurality of destination nodes in the destination network segment, the configuration update module transmitting the determined status of each of the plurality of communications links from the source node in the source network segment to each of the destination nodes in the destination network segment that provides the return message.

13. (Original) The system of claim 12 wherein the source node transmits the test message approximately once per second.
14. (Original) The system of claim 12 wherein the source nodes and the destination nodes are selected from the group consisting of a host, a router and a load balancer.
15. (Previously Presented) The system of claim 12 wherein the test message is a Logical Link Control type 1 frame format.
16. (Original) The system of claim 12 wherein the return message is an echo message of the test message.
17. (Currently Amended) A system for improving network availability in a segmented network, comprising:

a first network segment having a plurality of connected source nodes,

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a second network segment having a plurality of connected destination nodes, said second network segment connected to said first network segment over one or more paths;

identification means for identifying from one or more source nodes in the first network segment one or more cooperating destination nodes in the second network segment;

transmission means for periodically transmitting a test message over the one or more paths from a source node in the first network segment to one or more destination nodes in the second network segment; said transmission means in response to a return message received from said destination nodes in the second network segment, determining the status of said one or more paths; [[and]]

status update means for transmitting the determined status from said source node in the first network segment to each of the plurality of destination nodes in the second network segment that generated the return message; and

fault indicating means for indicating a fault in one of said one or more paths if said source node does not receive at least a predetermined number of return messages from said destination nodes in response to a predetermined number of test messages transmitted to said destination nodes.

18. (Canceled).

19. (Original) The system of claim 17, further comprising configuration means for configuring one of said paths between said source node and said destination nodes in response to said determined status.